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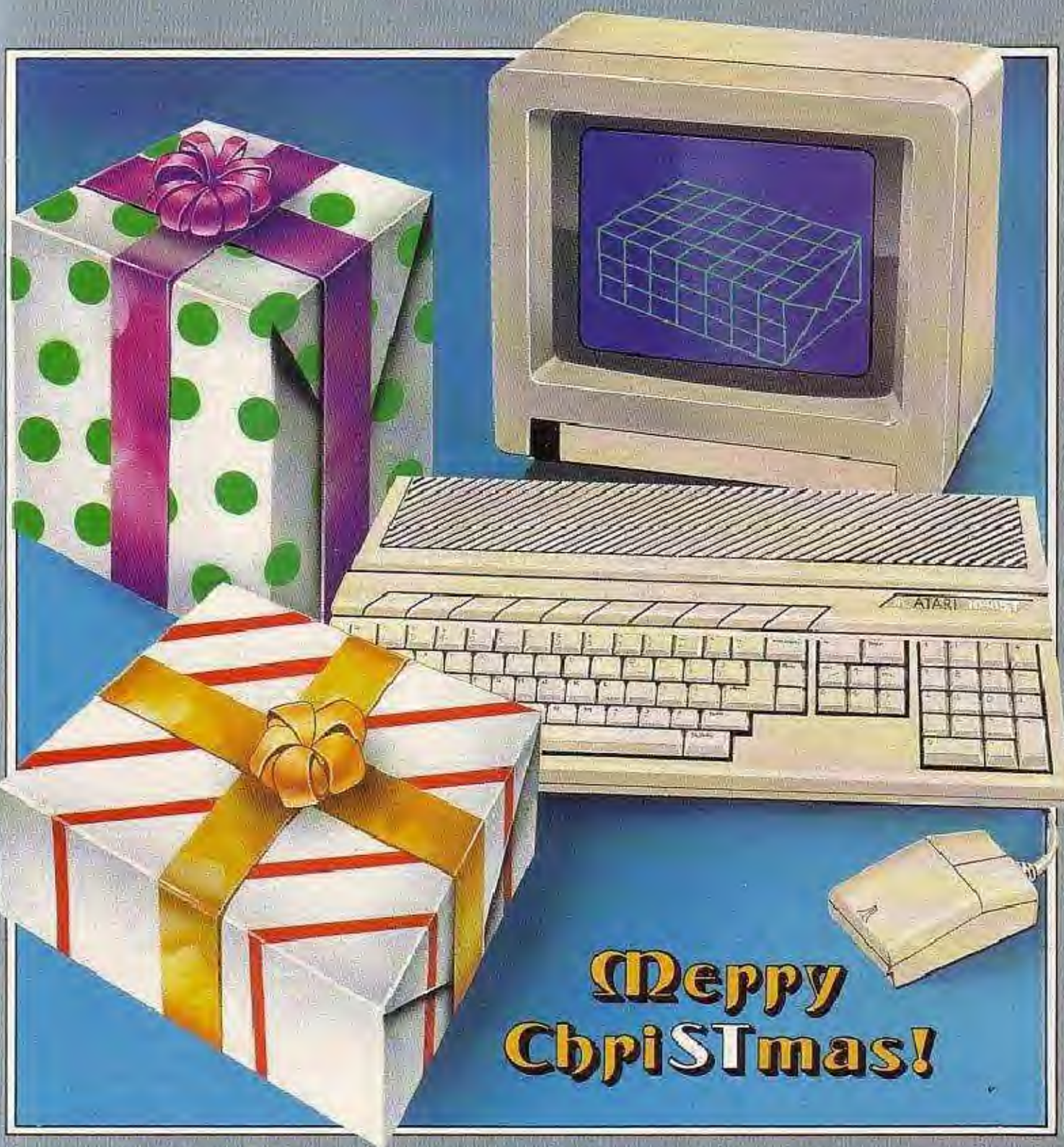
Atari ST User



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The ST – by appointment

IF there was ever any doubt that the ST is a superb entertainment machine, this has now been removed.

For it has been given the seal of approval by MicroProse no less – for the uninitiated, that's akin to sporting a "By Appointment to Her Majesty".

Not that the name MicroProse may be all that familiar to some ST users in the UK, for the moment at least. After all it has only just released its first title for the machine.

However, MicroProse just happens to be the Rolls Royce of the software industry in the USA with its award winning sophisticated simulations.

"So when you get MicroProse writing for your machine, you know you've got a winner on your hands", observed one leading industry figure recently.

For the corporation is known to select the names it hops into bed with with extreme care.

The most pressing reason for this being that it budgets up to $1 million on developing each of its titles. So the end product must essentially become a blockbuster.

"What they have aimed for and what they have got with each of their 14 titles to date is something equivalent to Gone With The Wind in film terms", a leading American computer journalist wrote recently.

As a result, quality for once has ensured quantity and that has translated into the corporation becoming the third largest entertainment software house in the States.

Nor is it a stranger to the world of Atari. For on the 8 bit front it already provides 25 per cent of all software sold in the United States. And MicroProse recently received an award as the most consistent supporter of Atari in the USA.

Its first title for the ST is Silent Service, a mind-blowing submarine simulation which arrives with the most impeccable of credentials.

Previously released for the IBM and Apple, it recently topped the famous Billboard Chart in the States for four weeks, having been at number two for three months before that.

In all Silent Service has won five major awards, the latest being the Best Computer War Game of the Year, presented by the Gaming Association of America.

So what makes it so good as to be able to beat the pants off 25 other top class nominations?

The answer seems to lie in the corporate slogan "The Action Is Simulated – The Excitement Is Real". For the experts behind the MicroProse simulations make them accurate in every detail.

Such is the realism involved that one of the MicroProse packages – Solo Flight – is used as a teaching aid by Cessna Flying Schools in the States.

All the titles call for making real life judgments and decisions as the users are called upon to perform a variety of challenging roles. And Silent Service is certainly no exception.

The thrill and danger of captaining a World War II submarine in the South Pacific can be experienced through a wide selection of historical scenarios ranging from single-ship attacks to multi-patrol missions with heavily escorted convoys.

All of the submarine's critical battle stations are replicated – the conning tower, engine room and ship's bridge.

Player selected "reality levels" provide challenge and complexity. Automatic time scaling insures that actions and decisions are constantly required.

In his review of Silent Service in the American Antic magazine, Naval Commander Rich Moore wrote:

"The simulation experts at MicroProse have outdone themselves . . . you can almost smell the diesel oil and feel the deck rolling beneath your feet".

Nor was the ST version of Silent Service simply a question of porting it over from a previous version. MicroProse doesn't do things like that.

The program has been completely re-written to take full advantage of the machine's graphics, sound and play-action capabilities.

It features a detailed map system and enemy targets, intricately designed instrumentation and

Silent Service . . . superb simulation

submarine interior, and an expanded enemy fleet to include heavy cruisers and aircraft carriers.

The sound effects of the sea, engine, enemy ships and submarine klaxon have been compared to studio recordings.

Game controls have been simplified to employ on-screen icons for all activity selections so that the submarine can be controlled entirely by using a mouse only. Naturally it also operates with a joystick or the keyboard.

Silent Service promises to be the first in a whole-line of high-quality simulation software for the ST from MicroProse.

The reason for this – according to a company spokesman – is that they see the ST "as one of the most exciting machines to enter the home computer marketplace in a long time".

Given the quality of its games and its commitment to the ST, the entry of MicroProse to the ST market promises great things for the future.

Mike Cowley reporting

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Just the thing for budding Kasparovs

Program: Chess
Price: £24.95
Supplier: Psion, Psion House, Harcourt Street, London W1H 1DT.
Tel: 01-723 9408

COMBINING the most stunning chess graphics you're ever likely to see on a home computer with fast and powerful play, Psion's new release is set to checkmate every other chess program on the market.

The graphics grab you by the throat. The large board and pieces are shown in full screen 3D perspective, the view being almost identical to what you would have if you were sitting in front of a real chess board.

You make a move by pointing and clicking the mouse on the desired piece, dragging it to the destination square and clicking again. Unlike the desktop facilities, there's no flicker or ghost-imaging while dragging – the pieces glide across the board like a finger across satin.

When a piece is moved by the computer, it too slides smoothly and unerringly to its destination square. Should a check result from either side the involved pieces gently pulsate.

No illegal moves are permitted – a warning bell sounds if you attempt to make one. Any move can be cancelled before the second click by returning the piece to its original square.

Psion Chess is rich in options, all accessible from pull-down menus. The accompanying manual gives you enough information to get started but most of the detail is built into a Help option which can be called up at any time. All text within the program is available in any of six selectable languages, including English, French and German.

Games may be between player and computer, two players or computer against computer. There is a wide range of computer speed/skill levels to choose from, ranging from novice through matching your own speed (equality) going right up to infinity (the computer keeps analysing until you force it to move).

An excellent two-dimensional display is also available. This only takes up half the screen, leaving room for chess clocks and move records to be displayed alongside the board.

A graphically superb and simple to use board set-up facility allows you to arrange your own positions for playing or for solving mating problems. The pieces skate on to and out of the board at your command. Psion Chess can solve mate problems of up to nine moves ahead by either side.

Some of the many other options are hint, take back, offer a draw, enable/disable computer's ability to resign, automatic replay (with optional forward and backward stepping) and analysis (computer's evaluation of position and current line). It's also possible to save a game for later reloading, invert the board, force the computer to make its best move so far, play its next best move and change sides.

The beauty of this program is not just skin deep. Behind the astounding graphics and wealth of options there lies a powerful chess-playing program. Psion Chess was in fact a recent winner of the World Microcomputer Chess Championships.

The program comes handsomely packaged and includes 50 classic games for you to study and replay.

This is an immaculate program and a joy to use. Whether you're a novice or a budding Kasparov, Psion Chess has got to be the one chess program that you simply must have – quality as high as this doesn't come along every day. Buy it! ■

Reviewed by Bob Chappell

Sound	*N/A*
Graphics	*10*
Playability	*10*
Value for Money	*10*
Overall	*10*

3D view from Psion Chess

GO FAR WITH STARGLIDER

Program: Starglider
Price: £24.95
Supplier: Rainbird, 74 New Oxford Street, London WC1A 1PS.
Tel: 01-240 8838

Reviewed by Andrew Bennett

WHEN Starglider was first shown at the 1985 PCW Show it was six months into development and consisted of just a few 3D routines written in machine code. A year later it has grown into a game which author Jeremy San had trouble squeezing into the ST's 512k of memory.

Having previewed Starglider in the September issue of *Atari ST User* we're going to take a more detailed look at the finished product and its gameplay.

The first thing that strikes you when you run Starglider is the stunning title screen and amazing music which accompanies it. The music – the Starglider song – has been specially recorded then digitised and stored in 170k of the ST's memory.

A quick press of any key and you're flung into your Airborne ground attack vehicle (AGAV) flying low over the planet Novenia, which has been overtaken by the evil Egron fleet. The graphics give a stunning 3D representation of the planet's surface and the multitude of enemy craft through the AGAV's window. They are based on the vector graphics from such games as Battlezone, but use the ST's resolution and colours to far more effect. The game can be played in black and white or colour.

Your ship is controlled with the mouse acting as joystick: A move to the left and the AGAV banks to the left, a move forward and the AGAV loses height, and so on. Speed is also controlled by the mouse. Keeping the right hand button pressed, you move the mouse forward to speed up and back to slow down.

Your primary weapon is the trusty old laser beam which is backed up by missiles. You are supplied with only one missile at the start of the game and must dock in a supply silo to replenish your stock. The laser guns are aimed using the cross hairs in the centre of the display and fired by pressing the left hand mouse button.

The Egron fleet is vicious, ranging from the magnificent red Starglider One with its flapping wings through tri-launchers – which fire three missiles at once – to ugly land based walkers. Most of the enemy fire deadly red missiles which can cause a quick depletion of your shields.

For their part, some of the enemy can only be destroyed with a missile while most need multiple hits with the laser. Some of the more menacing Egrons such as Starglider One require more than one missile hit, which is difficult because you must return to the supply silo for each missile.

A missile is launched by pressing the spacebar. A voice says: "Missile Launched" and a view from the missile's nose cone is shown. You only have a few seconds to steer it to its target before it detonates.

Docking with the silo is a tricky business which requires practice. When you have successfully docked you can call on the computer in the silo to report on the relative strengths of the various enemy craft. Entering a silo gives you an extra missile and replenishes your energy and shield. Dock again too soon and a missile won't be available since it takes a fixed amount of time to be manufactured.

Refuelling is probably the most difficult part of the game. I don't want to give too much away, but I will tell you that this is accomplished using the three energy towers on the planet surface and a very tricky flying manoeuvre.

The full background story is given in a 64 page novella which also gives clues for gameplay. You could play Starglider on its shoot-em-up merits alone for some time, but eventually a read of the novella will allow you to refuel and get more out of the game.

With some arcade-type games the danger is that you can explore them fully during a demonstration in a shop without realising it. Then, when you get the game home, you find there's nothing left to do. This won't happen with Starglider: The further you get into it, the more it offers you. It definitely gets my vote for *Atari ST User* game of 1986 (and possibly 1987 as well).

■

"A missile is launched..."

Sound	**9**
Graphics	**9**
Playability	**10**
Value for money	**9**
Overall	**9**

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Buying a present for your ST?

Santa Andrew Bennett delves into his sack of goodies

IF your ST has been crying out "What are you going to get me for Christmas?" or if you have a loved one who owns an ST, this article will help you through the hardware and software jungle so that you can easily decide what Christmas presents to buy them.

The problem with buying presents for a computer mad friend is that you often have no knowledge of what is good or bad – and computing can be a very expensive hobby. To help you decide, we've split the presents into three sections depending upon their price.

In the computer market the least you can get away with paying is probably in the £5 to £20 bracket. There are dozens of programs and accessories for the ST that fall into this category, and at this price they make the best small presents or stocking fillers.

Two ideas from the Macintosh market that have just appeared for the ST are the mouse mat and mouse house. The mouse mat – which sells for £9.95 – is a small vinyl covered mat which sits beside your ST and under your mouse. Moving the mouse over the mat, instead of your dusty desktop, will keep its insides clean and trouble free.

The mouse house is a cover for your mouse which costs £7.95. However, this is no ordinary plain dust cover – it's furry and has two small eyes, which make your mouse look both cute and alive. Not recommended to those who don't like real mice!

Dust covers also fall neatly into this price category. If you leave your ST unattended for long periods, you should make sure that large amounts of dust cannot build up inside the ST itself or its disc drive and monitor. Moulded to shape, a dust cover protects against this.

There are covers available for the drive, monitor or the ST. If you are going to buy the ST cover you should make sure that you get the correct size as the 520 models are smaller than the 1040ST.

Items such as printer ribbons, paper and blank discs are always being used up at alarming rates and will be gratefully received. Make sure though that you buy the correct sizes and specifications for the equipment owned. Ribbons are different for nearly every make of printer, but simply naming the printer will ensure that you get the right one. Printer paper is most commonly 9 inches (22.5cm) wide, with a sheet length of 11 inches (27.5cm).

Blank 3.5in discs for the ST can be either double or single sided. There are many makes of disc, which can often confuse the beginner who is naturally drawn to names that he recognises – but may have to pay a lot more for. As with video tapes there are only four or five actual manufacturers of discs – most of the cheaper brands are simply relabelled versions of the more expensive names. Nobody will hate you for buying X brand discs instead of Y. Prices range from about £15 to £35 for a box of ten.

Disc boxes can be bought for as little as £12.95 for a box which holds 25 discs. Once again a box for 3.5in discs must be purchased. A disc box will stop you losing discs and will keep them clean and dust free.

Although the average computer game costs between £9 and £15 for 8 bit micros, the majority of ST games fall into the £20 to £35 range. However, there are some games under £20. The most notable of these are Colourspace and Major Motion.

Colourspace from Llamasoft is described as being to light what a music synthesiser is to sound and is the modern equivalent of a kaleidoscope. Its effect is hypnotic. Everyone should have a copy.

Major Motion from Microdeal costs £19.95 and puts you in charge of a small car which is released on to a busy highway from the back of a van. It was reviewed in the August 1986 issue of *Atari ST User*.

With the ST being more expensive than the average micro, the £20 to £50 range is where most of the products for it fall.

For starters there are literally dozens of games, some conversions of 8 bit versions and other brand new titles.

With the ST's speed and large amount of memory, arcade games are getting closer and closer to real arcade quality – and among the best of these are Joust and Starglider.

One of the first commercial programs written for the ST, Joust the has only just been released by Atari. You're in charge of a strange emu-like bird in a contest against the computer controlled enemy. It is a faithful reproduction of the arcade game of the same name, even down to the flapping of the bird's wings.

Based on a Star Wars scenario Starglider – reviewed elsewhere in this issue of *Atari ST User* – is probably the ST game of the year and well worth the money at £24.95 from Rainbird.

A title that might be in the shops before Christmas is Marble Madness from Electronic Arts. This game puts you in control of a ball

bearing as it careers around a course and is true in every way to the arcade original.

Adventure games for the ST fall into two camps: text only and graphic. The text only titles from Infocom have become classics since their introduction to the micro scene in the late 70s. However as the graphics capabilities of home computers have increased over the years, adventure games which also include pictures of their various scenes have grown in popularity.

One game which caused much favourable comment when it was introduced earlier this year is The Pawn from Rainbird. Costing £24.95 and billed as an Infocom-type game with graphics, The Pawn includes many professionally drawn pictures.

Also worth looking out for are the range of adventures from Activision. Borrowed Time has you as a Sam Spade-type character who must solve a crime. Tass Times In Tone Town is set in an alternative universe populated by strange creatures and where everyone speaks Teen Speak.

There are many simulation games available for the ST ranging from golf to flying. The ones to look out for in this category are Leader Board from Access, and Mean 18 from Accolade – both golf games. Leader Board costs £24.95 and gives a true 3D representation of each hole, while Mean 18 costs £44.95 but offers the ability to design your own courses with its built-in editor. Silent Service, from Microprose, simulates undersea warfare and is well worth its price of £24.95.

Strategic games for the ST are few and far between at the moment. Probably the most interesting and notable is the newly converted Psion 3D chess. This is a complete computer chess player that is better than most dedicated machines and sells for £24.95.

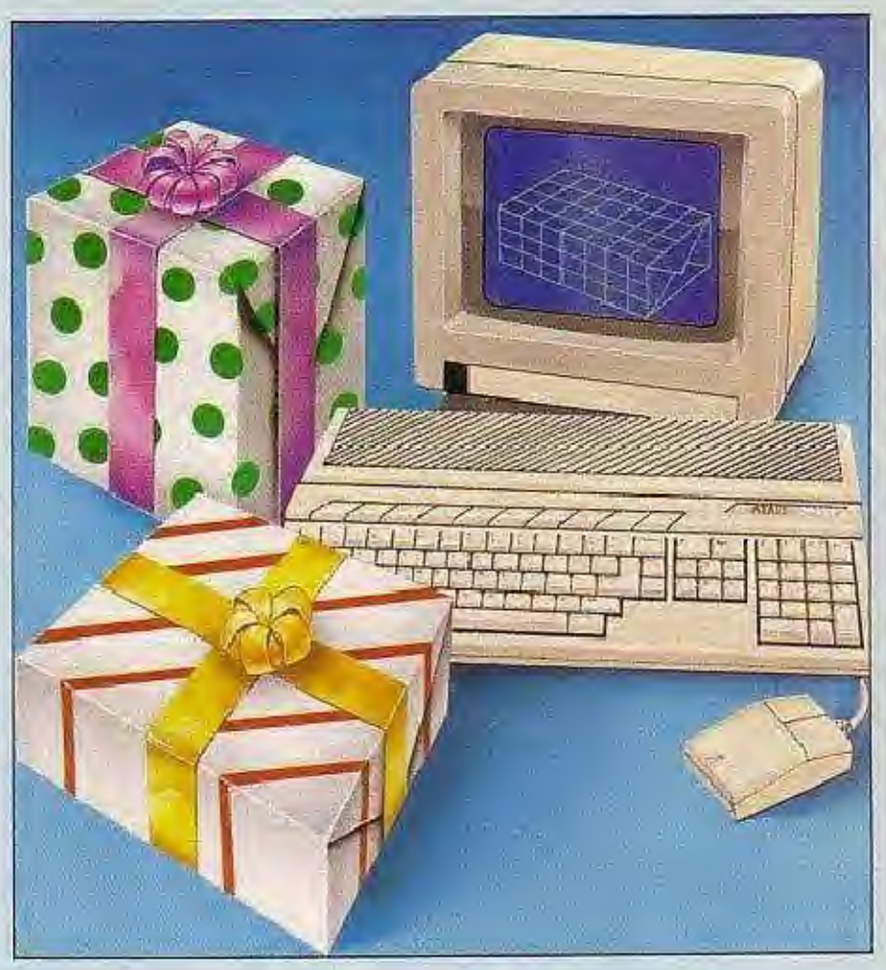
Also in this price range are a number of utilities, including ram discs, printer buffers, desk accessories and disc doctors. The best value desk accessory is probably the Back-Pack cartridge from Computer Concepts (reviewed in last month's *Atari ST User*) which includes nine desk accessories for £49.95.

Always welcome is a good disc doctor program – these repair faulty or corrupted discs. Best known of these are Michtron Utilities from Microdeal and Disk Doctor from Antic software.

When we enter the £50 to £250 price range we start to leave the area of software and enter the region of small hardware devices and add-ons.

First off the mark is Fast ST Basic, the cartridge language from Computer Concepts (reviewed in last month's *Atari ST User*) which costs £89.95. Judging from ST owners' reaction to this new Basic, Computer Concepts is going to sell thousands during the next few months.

Several other languages fall squarely into this price range. The favourite language for the ST is still C, and the most popular C compiler is from Megamax which includes a linker, editor and resource program for £157.55.



Additional disc drives for the ST are made by three manufacturers. Atari makes the most expensive of these with single sided drives at £150 and double sided at £199. Cumana and Advanced Technologies and Techniques both produce double sided drives at lower prices. Cumana charges £159 for one 1Mb double sided drive and £269 for two. AST's drive costs just £99, but requires an Atari drive to connect to.

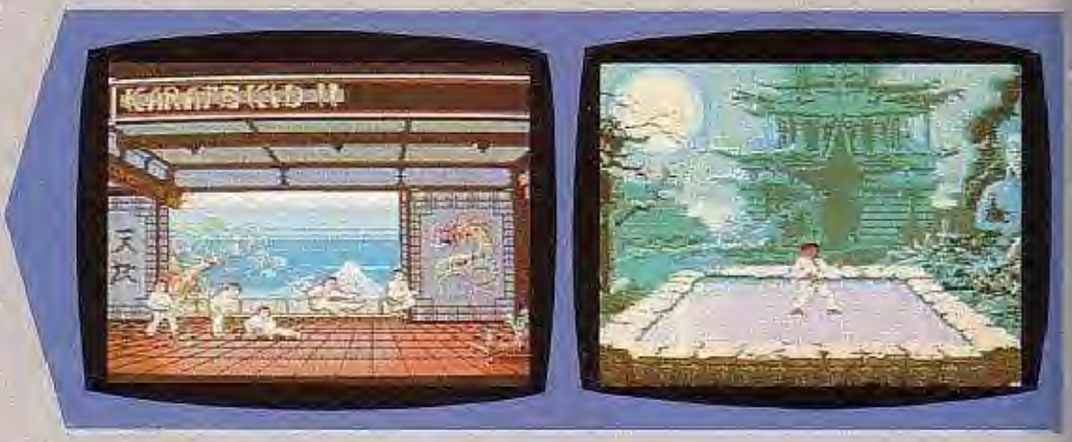
For those with colour systems £150 will buy an Atari black and white, high resolution monitor. Definitely not a downgrade, this will allow you to use some of the ST's professional programs which only operate in high resolution which is unavailable in colour.

In these days of cheap disc drives, adding a printer to the system is usually left until last. ST compatible printers can cost anything from £150 to several hundreds of pounds. An Epson compatible printer is best, since the ST is set up to do graphics and screen dumps on an Epson printer. And make sure you get the lead when you get the printer!

And that about sums it up. Of course if you've got money to burn you might consider upgrading from one ST model to another. By Christmas Atari will be shipping the new 2Mb and 4Mb ST models. If you are friendly with your dealer, perhaps he'll be prepared to take your current model in trade in for one. If you are prepared to spend this much on your ST, then I'm sure that it will be very happy with you for the rest of the year. ■

STIMULATION

FROM THE WORLDS LARGEST ST PUBLISHERS



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PINBALL comes to life with this new arcade game. PINBALL has never been so realistic or so creative. First join the staff of the Pinball Factory – take an empty play area and design the background graphics choosing colours that the ball won't bounce off – the art package will let you design each screen pixel if you want that sort of definition. Next design your own playing board with 30 different bumpers and ball traps to position it's no easy task. Now test the game and change the design to improve the play, are you satisfied with the play area? then switch to the Logo design department, here you can design your own logo with the full art package included in the program. All finished? not yet! set the scoring, gravity, ball speed and elasticity then play the best game of Pinball you've ever played! crisp graphics, sound and fast action. Mouse controls let you 'bump' the machine just like a real pinball machine and "Flip" the flippers. Now remember to save your customized game to disk. You can decide what's more fun – designing or playing?
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I HAVE had some interesting correspondence this month. Top of the agenda was the ST v Amiga rivalry. Among many others Mr R.J. Griffin has asked about their relative merits.

The machines are bound to be compared: Both are 68000 based computers. Both offer excellent colour graphics and both have large amounts of memory. When making comparisons between the systems, you might like to take the following points into consideration.

Although, on paper the Amiga specifications seem more impressive, it has been hampered both by a lack of built-in memory and Commodore's indecisive marketing. The Amiga has better graphics with more available colours than the ST. Graphics displays are made much faster by the presence of the Amiga's blitter chip, which automatically speeds up all such operations. The Amiga also has better sound capabilities and offers full stereo.

While the ST lags behind on most of these features, being first on the market has meant that the ST can call on four or five times more software titles than the Amiga. In addition, the Amiga has also been slow to catch on because of its price – for a 512k computer with 512 colours and very high resolution graphics (for a micro) the ST is truly "Power Without The Price".

And the ST's capabilities are increasing: Atari has a blitter chip for the ST which will be available before the end of the year (see *Atari ST User* for November) and hope to introduce both stereo sound and graphics chips before the middle of 1987. Their addition will bring the ST up to and in some cases surpass the Amiga.

My advice therefore is to buy an ST now and expand it by adding the new chips when they become available and if you find you need them. In this way you'll finish up with the computer best suited for your needs without paying for any unnecessary frills.

★ ★ ★

Harvey Jacobs of London is about to start work on a game which he hopes to market one day and he wants to know which language is best for beginners. Until a couple of months ago my answer would have been that the only programming language to make full use of the ST's features – including Gem – was C.

However my opinion has changed now that I've had a chance to use a copy of Computer Concepts' Fast Basic (reviewed in the November issue of *Atari ST User*). This implementation of the language is easy to learn, fast and gives nearly complete access to the ST's capabilities.

In the near future Computer Concepts hopes to produce a compiler for Fast Basic which will allow you to create stand-alone programs. This will mean that you will be able to sell or give your programs to ST owners who do not own Fast Basic itself.

★ ★ ★

Stephen Vasey has written from Switzerland where he and his faithful ST are currently shivering through the winter. He'd like to make some ST friends in the UK and can be contacted at Montchoisi 29, 1006 Lausanne, Switzerland.

★ ★ ★

Many of you have asked how the 512k version of the ST is termed the 520ST. Leonard Tramiel gave me the answer, expressing slight annoyance at the names of the two new machines.

He explained that up until now all of the recent Atari computers have been numbered by taking the number of bytes of built-in ram that the computer has and rounding it down to the nearest 10,000.

This means that a 2Mb computer should be numbered 2090 and a 4Mb model should be numbered 4190. It seems that the development department at Atari (where Leonard Tramiel works) was over-ruled by the marketing men who thought that double a 1040 is a 2080 and double that is a 4160. But, of course, now we know better . . .

★ ★ ★

Keep the questions rolling in. Remember that I can also be contacted on Telecom Gold or MicroLink at 72:MAG001 or at Prestel box 614568383. Make sure that you mark your question *Atari ST User*.

I'll be at the Atari User show at the end of November and hope to see you there. A Merry Christmas to everyone. ■

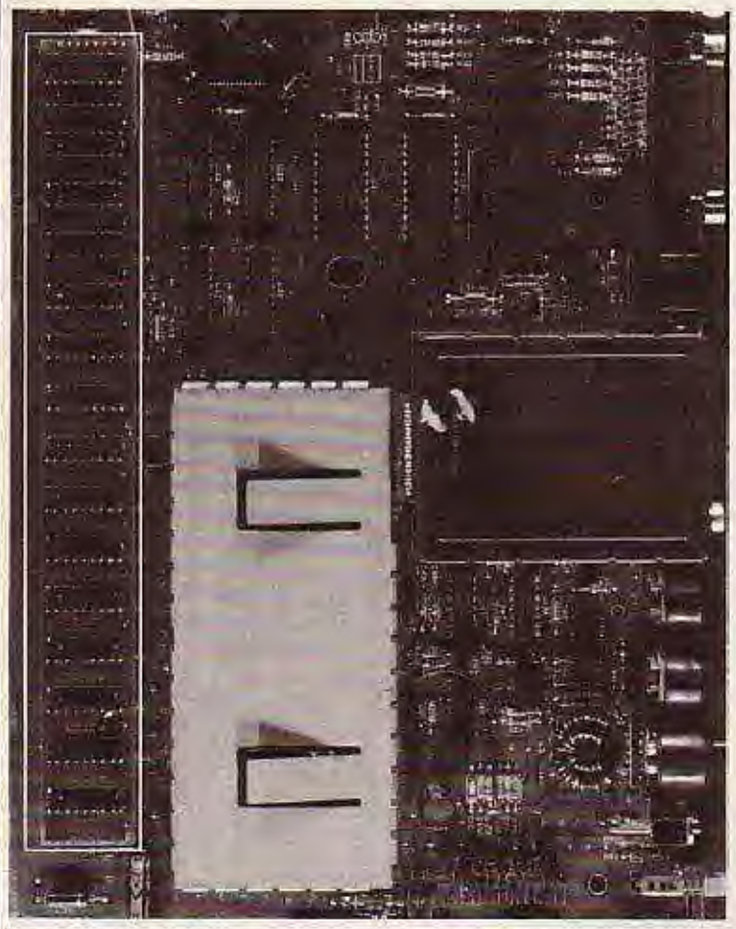
As you know, we always welcome submissions of ST-related articles and programs. Until now we have only accepted programs in ST Basic and Logo, but we are expanding this to include C and Fast ST Basic.

Keep them coming. We will always publish well written, useful programs which will help or teach your fellow readers. We pay for all submissions, and you'll also get your name in print. Fame at last!

Send your Atari ST queries to: ANDREW BENNETT, Atari ST User, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.

MEGAMAX C: Best for the ATARI ST

Reviewed in ATARI User, September 1986 by Peter Knowles and Roger Wier. "You get a complete development system — everything necessary to produce commercial quality software is provided ... Clearly, Megamax C compiles faster and produces much smaller files. These are great advantages, and may well prove to be the overriding consideration to many prospective buyers — together with its friendly front-end shell and complete manuals"



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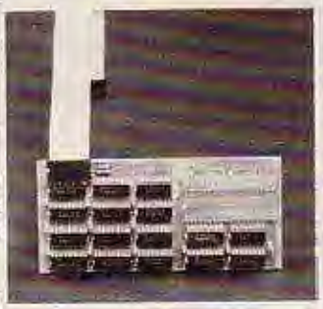

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More desktop extras

Reviewed by Simon Judge

ONE of the great things about Gem is that you can load up to six desk accessories into memory at once. Cornerman is such an accessory, containing 10 different utilities.

An *Ascii Table* display 16 characters at a time with their decimal and hexadecimal values, and you use conventional sliders to look through the table. Ascii codes are often required during program development but unfortunately editors supplied with some languages are not Gem based, thus preventing Cornerman's facilities from being accessed.

The *16 digit calculator* provides three memories, base conversion and operates in binary, octal, decimal or hexadecimal. There is a direct correspondence between the positioning of the calculator's keys and those of the ST's numeric keypad.

To enter the extra characters required for hexadecimal numbers you use the cursor keypad. Above the main display is a reminder of the last four numbers and functions entered which can also be echoed to the printer.

Notepad allows storage of up to 32,767 pages of seven lines each of 32 characters. Facilities provided are to edit, delete, load or save text. Data is saved to a file on disc, together with the date and time. However control codes in the file prevent you from using text editors or word processors to edit notepad data.

Dialer is an address/phone directory designed for use with a Hayes-compatible auto-dial modem. The information is again saved to a file on disc.

Phone Log, used in conjunction with Dialler, records the date, time, person and duration of every phone call. It is assumed that telephone numbers are in the American format of three numbers for the area code, followed by another three for a local area code and four for the number itself.

The *Setup* utility allows you to select how these numbers are interpreted and it is possible to store British numbers, although their textual representation in the directory will probably be incorrect with spaces in the wrong places. The Setup utility also allows the RS232 parameters to be changed but the 1200/75 baud rate is a noticeable omission.

Fifteen is an identical puzzle to that found on the Macintosh desktop, involving shifting numbered tiles until they are in numerical order. It's a great novelty when you first use it, but I would question its inclusion in a utility suite.

The *Clock* utility produces a small analogue clock which, by clicking the "full" box, fills the whole screen. To prevent screen phosphor burn the screen colour changes every minute on a colour monitor and inverts on a monochrome monitor. You can set up a facility so that a password must be entered before the large clock will be removed from the screen, enabling you to conceal what you are working on.

On booting up the system a small rectangle in the top right corner of the screen gives a digital time display in hours and minutes. A minor irritation is the periodic flickering of this rectangle and the mouse pointer, but you can disable it.

The *Print* utility allows printing from the files generated by Notepad, Dialler, Phone Log and Setup. You can print all entries, the currently displayed entry or entries between specified dates.

Dos Window allows you to run a non-Gem program from within another program without returning to the desktop. The program must be stored on disc as "command" and have the .PRG, .TOS or .TTP file extension. This facility will allow access to MichTron's Dos Shell program which permits the user to issue commands to the operating system from the keyboard.

Cornerman takes up about 107k on the disc and 175k of ram when installed. The difference

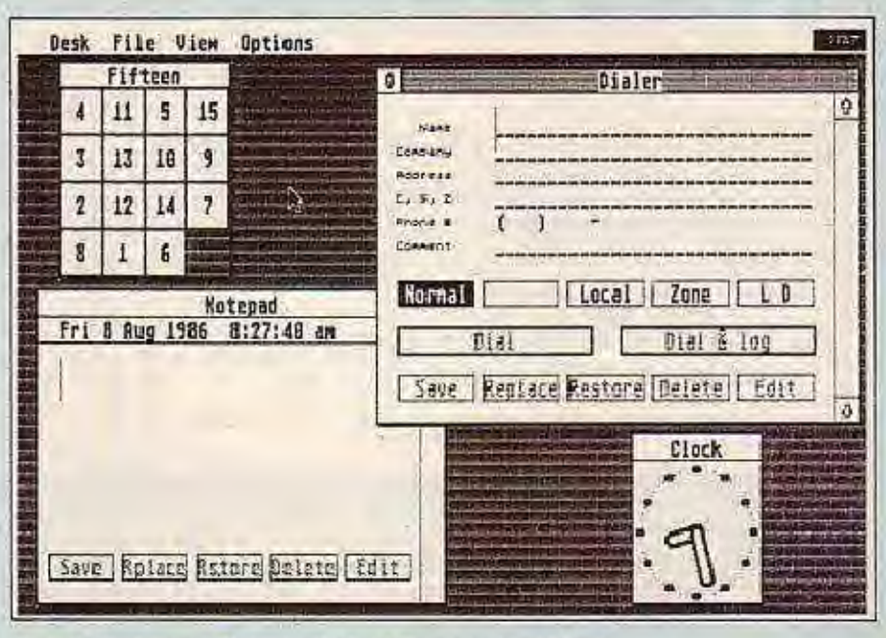
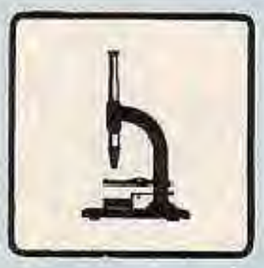


Figure 1: Cornerman's Notepad, Dialer, Fifteen puzzle and Clock



between these two figures represents the workspace required for saving the screen, creating a RS232 buffer and for buffering data before it is saved to disc.

The memory is claimed when Cornerman is installed rather than dynamically when the utility is used, ensuring that the accessory will only be installed if there is enough memory to use all the utilities. An exception is the RS232 buffer, which is not created if there is insufficient memory. In this case, a warning is given to the user and the auto-dial facility is disabled.

The memory constraints become very limiting on 512k machines. In 1st Word there isn't enough memory left to run the printer driver program, regardless of the size of the document. In ST Basic there is only about 25k of free memory. Both these examples are with the TOS in rom without which there wouldn't even be enough memory to run Basic.

Cornerman can easily be transferred to a start-up disc, thus alleviating any disc space problems using the 500k drive. The data files for the utilities such as the notepad must also be on this disc.

The limitation of six desk accessories encourages writers to pack as many utilities as possible into one accessory, but this means that you cannot separate the utilities and discard the ones you don't need. The result is an accessory that is so large that it is not always practical to use it in conjunction with other applications on a standard ST. Owners with 1Mb machines should not have any problems unless they install other accessories such as ram discs and printer spoolers.

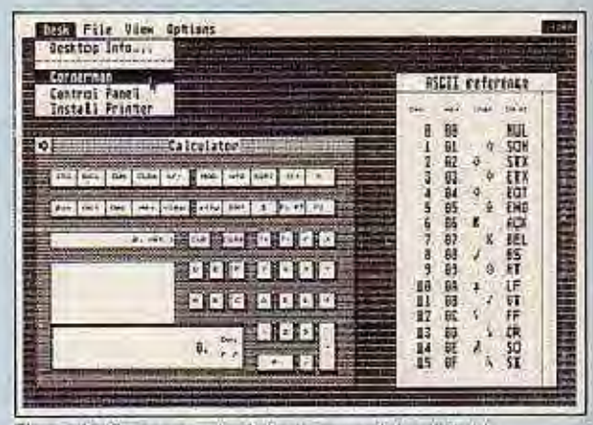


Figure II: Cornerman's Calculator and Ascii Table

In conclusion, Cornerman is an excellent package – if you can spare the memory! ■

Graphics	***8***
Easy of use	***9***
Value for money	***8***
Overall	***8***

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The 520ST-M keyboard costs only £346.96 (+VAT=£399) and includes an RF modulator and cable, allowing you to connect it to an ordinary domestic TV set. The keyboard is supplied with 512K RAM, a mouse and a free set of 3½" disks containing applications software. For a limited period from August 11th 1986, we have some special packs offering combinations of the 520ST-M keyboard with a ½ Mbyte SF354 Atari disk drive and an Atari monitor (either the Mono SM124, or Colour CM8512). These packages offer up to £200 extra discount on a system. If purchased from Silica, they also come with our free 'ST STARTER KIT'. All of the pack prices shown in the chart include VAT.

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	Disk Drive	£149	Disk Drive £149
	Mono Monitor	£149	Colour Monitor £299
	Normal Price	£846	*Normal Price* £996
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	Pack Price	£696	**Pack Price** £846
£200 DISCOUNT 2 DISK DRIVES + MONITOR + PRINTER	PACK 4 (MONO)		PACK 5 (COLOUR)
	Keyboard	£399	Keyboard £399
	Disk Drive	£149	Disk Drive £149
	Disk Drive	£149	Disk Drive £149
	Mono Monitor	£149	Colour Monitor £299
	Printer (SMM804)	£199	Printer (SMM804) £199
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We are pleased to be able to offer a 1Mbyte upgrade on the standard 520ST keyboard to increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £99.96 (+VAT=£100). Any of the five packs can be upgraded to 1Mbyte for only £100. The 1Mbyte ST offers a low price alternative to the 1040, but also gives you the benefit of an RF modulator (not normally fitted on the 1040).

FREE SOFTWARE

When you buy a 520 or 1040 ST computer keyboard from Silica Shop, you will receive a large and varied software package free of charge. This package consists of twelve programs. Wherever you purchase your Atari ST computer, you should receive the first six software titles as standard. However, if you purchase your ST from Silica, you will also receive a further six extra titles, giving you a total of twelve. All ST's now have TOS/GEM already installed on ROM, so the list of free software you should receive is as follows:

1) GEM - *DR Desktop environment with WIMP (fitted in ROM)*
2) TOS - *Trained Operating System (fitted in ROM)*
3) 1st WORD - *Word Processor by GST using GEM*
4) BASIC - *Personal Basic by DR (with manual)*
5) LOGO - *Logo language by DR (with manual)*
6) NEOCHROME - *A powerful colour paint and graphics package (only useable with colour systems)*

If you purchase your ST from Silica, not only will you receive the standard six pieces of software as listed above, but we will also give you the following six additional programs FREE OF CHARGE:

7) MEGAROIDS - *Asteroids type game by Megamax*
8) DOODLE - *Simple paint/doodle drawing package (works on mono or colour systems)*
9) CP/M EMULATOR - *Allows use of DR's Z80 CP/M software to run on the ST range*
10) CP/M UTILITIES - *Various utilities to use with CP/M*
11) DEMONSTRATION & PUBLIC DOMAIN SOFTWARE - *Various games, demos and accessories*
12) CARDS - *A unique set of card games from Microdeal*

These additional free software titles are all part of the FREE Silica ST STARTER KIT, return the coupon below for further details.

FOUR FREE MANUALS

In addition to the free software which will be given to you when you buy your ST from Silica, you will receive four free manuals:

1) **ST OWNERS MANUAL (80 pages):** *Easy access to the information you require to unpack, set-up and become familiar with the ST.*
2) **ST BASIC SOURCE BOOK & TUTORIAL (240 pages):** *Gives you the information to increase your level of programming expertise.*
3) **ATARI LOGO SOURCE BOOK (77 pages):** *A source book for Logo, showing how to use the language in the GEM environment.*
4) **1st WORD MANUAL (48 pages):** *Instructions for 1st Word.*

ST NEWSLETTER

8 PAGES OF INFORMATION TO HELP YOU TO DECIDE
RETURN THE COUPON FOR A FREE COPY

1040ST-F

For the businessman and the more serious home user, there is the 1040ST-F with 1026K RAM. This can be used in a business environment as a stand-alone system, or can support a mainframe computer as a terminal. The 1040ST-F keyboard with integral 1Mb disk drive costs only £699 (+VAT=£803.85). As the 1040ST-F was manufactured solely with business use in mind, it does not come with an RF modulator for use with a domestic TV. Instead, it requires a monitor. There are three Atari monitors available, and the prices for the 1040 with these monitors are as follows:

1040 Keyboard Without Monitor - **£699** (+VAT= £803.85)
1040 Keyboard + High res mono monitor - **£799** (+VAT= £918.85)
1040 Keyboard + Low res colour monitor - **£899** (+VAT=£1033.85)
1040 Keyboard + Med res colour monitor - **£999** (+VAT=£1148.85)

The 1040ST-F includes 1Mbyte of RAM as well as a 1Mbyte double sided disk drive and mains transformer, both built into the keyboard to give a compact and stylish unit, with only one mains lead. The 1040ST-F is supplied with a set of software disks as well as our own FREE Silica 'ST STARTER PACK'. Call into your nearest branch of Silica Shop for a demonstration:

1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
117 Orpington High Street, Orpington, Kent, BR6 0LG
Lion House (1st floor), 227 Tottenham Court Rd, London, W1
Selfridges (1st floor), Oxford Street, London, W1A 1AB

£699

REDUCED PRICES

Atari's ST personal computers are now firmly established both in the USA and Europe. The main attraction of the ST range is the value for money which these computers represent, giving both private and business users a powerful asset at a very modest price. There are now several ST packages available from Silica at a reduced price, further enhancing the Atari 'Value for Money' reputation. In addition, we are giving away a FREE Silica 'ST STARTER KIT' with every 520 or 1040 ST purchased at Silica Shop. These offers will only be available for a limited period and commence on 11/8/86.

POWER FOR BUSINESS

The list below shows some of the new business products which have been recently launched for the Atari ST range. It gives an indication of the ST's potential to business buyers looking to install a powerful, low-cost system:

CP/M EMULATOR
20Mbyte HARD DISK
LOTUS 123™ CLONE
dBASE III CLONE
IBM COMPATIBILITY
VT100 EMULATOR
MICROSOFT WRITE
dBASE II

Any ST computer will provide its user with a very powerful asset, utilising a vast range of applications, particularly in the business world. Many software companies have been quick to recognise it for its business potential, and have produced programs for the ST which harness this potential. In addition, there are several peripheral and hardware products becoming available to add to the ST's 'Power For Business'. Software now available includes dBMan, a dBASE III clone as well as H&D Base, a dBASE II clone. In fact, First Software have now launched Ashton Tate's original dBASE II program for the ST. In addition, PC Intercomm is a VT100 emulator which enables you to use any ST keyboard as a terminal connected to a mainframe or mini. Other programs include a powerful accounts package by Cashlink and a Lotus 1-2-3™ clone called VIP Professional. Microsoft have announced that their powerful word processor 'Microsoft Write' will soon be available for the ST. Many packages are available for very specific market applications including a powerful CAD (Computer Aided Design) program called Easy Draw from Migraph. In addition, there is an engineering tool called PC Board Designer by Abacus Software which will enable the user to design printed circuit boards. For further details of how the ST can help in your business, return the coupon below. We will be pleased to send you our latest newsletter and price list.

PRICE MATCH PROMISE

We hope you will find that the combination of our low prices, FREE delivery service, FREE Starter Kit and after sales support, will be enough to make you buy your Atari equipment from Silica Shop. If however, there is something you wish to purchase, and you find one of our competitors offering it at a lower price, please contact Owen Pascoe (Office Manager), or one of the telesales staff in our sales department. When you telephone us, please provide us with our competitors name, address and telephone number. Providing our competitor has the goods in stock, we promise to match his offer (on a 'same product - same price' basis) and still provide you with our normal free delivery. You will also be entitled to our full after sales service, including free newsletters and technical helpline support. We don't want you to go anywhere else for your Atari products. So shop at Silica, the U.K.'s undisputed NO1 Atari specialist.

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At Silica we have been successfully dedicated to Atari ever since their products first appeared on the UK market. We can attribute our success largely to the Atari specialisation which we practice and to the user back-up we provide. Rest assured that when you buy a piece of Atari hardware at Silica you will be fully supported. Our mailings giving news of software releases and developments will keep you up to date with the Atari market and our technical support team and sales staff are at the end of the telephone line to deal with your problems and supply your every need. With our specialist bias, we aim to keep stocks of all the available Atari hardware, software, peripherals and accessories. We also stock a wide range of Atari dedicated books and through us, the owners on our list can subscribe to several American Atari dedicated magazines. We can provide a full service to all Atari owners and are now firmly established as the UK's NUMBER ONE Atari specialists. Here are just some of the things we can offer to our customers:

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If you would like to be registered on our mailing list as an Atari computer owner, or as a person interested in buying an Atari machine, let us know. We will be pleased to keep you up to date with new Atari developments free of charge. So, return the coupon today and begin experiencing a specialist Atari service that is second to none.

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Flip Side	£19.95
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520 STM Monochrome System with 2 x ½ MBYTE Disk Drives £675.00 Inc. VAT

520 STM 2 x SF354 CM36512
520 STM Colour System with 2 x ½ MBYTE Disk Drives £820.00 Inc. VAT

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DAISYWHEEL PRINTERS
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Accessories

LISTING PAPER

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Teleprinter Roll	£4.50
Teleprinter Roll Holder	£14.00

PRINTER LABELS
1000 90 x 36mm 1 across £5.70
2000 90 x 36mm 2 across £12.00

ATARI SOFTWARE
Please allow 7 days delivery on some items of Atari Software.

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1st Mail	£29.95
C – Compiler	£59.95
Macro Assembler	£39.95
Fractal Generator	£19.95
ANTIC	
CAD – 3D	£49.95
FLASH	£39.95
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The Cartographer	£29.95
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The Astrologer	£24.95
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Accounting Software

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BAS Accounts	195.50	BAS
BAS Business System	333.50	BAS
BOS/Fixed Assets	460.00	BOS
BOS/Inventory Control	230.00	BOS
BOS/Invoicing	230.00	BOS
BOS/Job Costing	460.00	BOS
BOS/Nominal Ledger	460.00	BOS
BOS/Payroll	460.00	BOS
BOS/Purchase Ledger	460.00	BOS
BOS/Purchase Order Processing	460.00	BOS
BOS/Sales Ledger	460.00	BOS
BOS/Sales Order Processing	920.00	BOS
CashLink ST Accounts	339.25	CashLink
DAC Easy Accounting	69.95	Silica
Debtors System	2875.00	Crestbond
Expenses	3162.50	Crestbond
Financial Cookbook	49.95	Silica
Incomplete Records	1380.00	Crystalline
Incomplete Records	345.00	Kyle Data
Individual Item Stock Control	460.00	Software Support
Integrated Accounting	460.00	Kyle Data
Invoicing	172.50	Kyle Data
Invoicing and Sales Statistics	345.00	John Uings Software
Job Costing	345.00	Barcellos
MAP Integrated Accounting	149.00	Silica
Nominal Ledger	345.00	John Uings Software
Payroll	230.00	Kyle Data
PML/Cashbook	230.00	PML
Purchase Ledger	345.00	John Uings Software
Purchase Order Processing	460.00	Symtec Computers
Purchase Order Processing	460.00	Software Support
Purchasing	345.00	John Uings Software
Sales Ledger	345.00	John Uings Software
Sales Order Entry	345.00	John Uings Software
Sales Order Processing	460.00	Software Support
ST Accounts	150.00	Silicon Chip
ST Financial I	39.95	Haba
Stock Control	345.00	John Uings Software
Synsoft Accounts Payable	49.95	Silica
Synsoft Accounts Receivable	49.95	Silica
Systematics/General Ledger	517.50	Systematics
Systematics/Invoicing	287.50	Systematics
Systematics/Job Costing	287.50	Systematics
Systematics/Payroll	287.50	Systematics
Systematics/Purchase Ledger	345.00	Systematics
Systematics/Sales Ledger	345.00	Systematics
Systematics/Stock Control	402.50	Systematics
Taurus Accounts	287.50	Execon
Taurus Invoicing/Order Processing	155.25	Execon
Taurus Stock Control	143.75	Execon
Towngate Cash Manager	575.00	Towngate
Two Key Accounting	79.95	Silica
Urgent Creditors System	2472.50	Crestbond
WASP Incomplete Records	1150.00	Whitendale

Communications Software

Product Name	RRP inc VAT	UK Distributor
BBS	29.95	Microdeal
Chat!	19.95	Silica
DFT – ST/IBM Direct File Transfer	29.95	Microdeal
FaSTcom	49.95	Atari
Flash	39.95	Silica
Forem ST	99.99	Mike's Computer Store
Habacomm	49.95	Haba
I'S Talk	49.95	Ariolasoft
K-Comm	49.95	Kuma
Mi-Term	29.95	Microdeal
PC Intercomm	124.00	Silica
PunchNet	184.00	Software Punch
ST 2392	169.00	Silica
ST Comm	29.95	Silica
ST-Term	29.99	Mike's Computer Store
Super Term	59.80	Silica
Terminal ST	69.95	Atari
Thrudata	862.50	BCC Computing
Your Program	69.00	Silica

Database Software

BAS Database	138.00	BAS
DB-Calc	49.95	Software Express
dBASE II	119.00	First Software
BOS/AutoClerk (inc. AutoClerk RT)	460.00	BOS
BOS/AutoClerk RT	115.00	BOS
BOS/Finder	460.00	BOS
Data Manager	74.95	Silica
DB Master One	49.95	Atari
H&D Base	99.95	Silica
Habadex	49.95	Haba
Habaview	74.95	Haba
Hippo Simple	49.95	Silica
K-Data	49.95	Kuma
Laserbase/ST	99.95	Laser
Power-Pak Database	29.95	Laser
TRIMbase	89.95	Talent
Zoomracks	79.95	Silica
dBMAN	194.35	Atari

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Back Pack	49.95	Computer Concepts
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Sidecar	49.95	Silica
VT52 Terminal Emulator	FOC	Atari

Desktop Publishing

Megafont	39.95	Silica
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Typesetter ST	39.95	Silica

Educational Software

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Maps and Legends	34.95	Silica
Master Type	39.95	Silica
Typing Tutor/Word Invaders	34.95	Silica

Entertainment Software

A Mind Forever Voyaging	34.95	Activision
Amazon	49.95	Silica
Arena	29.95	Psygnosis
Baker Street Detective	17.95	Silica
Bally Hoo	29.95	Activision
Battlezone	29.95	Atari
Borrowed Time	24.99	Activision
Brataccas	34.95	Psygnosis
Breakers	44.95	Silica
Bridge	29.95	Silica
Brimstone	44.95	Silica
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Colourspace	19.95	Llamasoft
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Pegammon	17.95	Silica
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Protector	19.95	Paradox
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Wishbringer	29.95	Activision
Witness	29.95	Activision
Wizard of Oz	39.95	Silica
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Zork I	29.95	Activision
Zork II	29.95	Activision
Zork III	29.95	Activision

Graphics Software

Advanced Art Studio	29.95	Rainbird
Animator	29.95	Microdeal
Art Director	49.95	Mirrorsoft
C.O.L.R. Object Editor	29.95	Silica
Comic Strip Maker	34.95	Silica
Degas	39.95	Ariolasoft
Degas Elite	79.95	Ariolasoft
Doodle	FOC	Atari
Easy Draw	149.95	Silica
Film Director	59.95	Mirrorsoft
Font Editor	79.95	Silica
Fractal Generator	19.95	Electric Software

Product Name	RRP inc VAT	UK Distributor
Graphic Work Station	199.00	In Soft
Hippo Art I	39.95	Silica
Hippo Pixel	39.95	Silica
K-Graph	49.95	Kuma
Make-It-Move	49.95	Silica
Neochrome Sampler	FOC	Atari
Neochrome	39.95	Atari
Paint Pro	49.95	Silica
Paintworks	34.95	Activision
Print Master	39.95	Silica
Print Master – Art Gallery I	29.95	Silica

Miscellaneous Management

BOS/Office Pack	920.00	BOS
Desk Diary	59.95	Eidersoft
Electro-Calendar	39.95	Silica
Haba Business Letters	29.95	Haba
Haba Wills	29.95	Haba
Haba merge	39.95	Haba
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Based around BBC BASIC, but considerably extended, FAST BASIC is a modern structured programming language. It is the ideal environment for those who want to experiment with the ST and to find out about GEM and 68000 assembly etc.

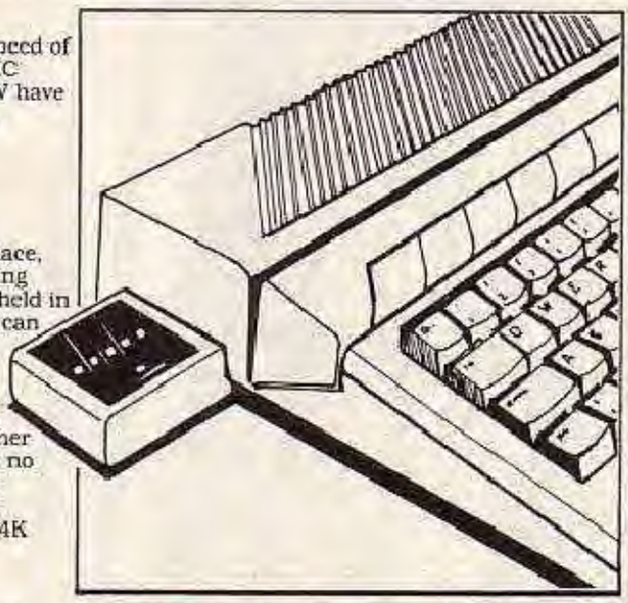
ST CARTRIDGE.

SPEED
With an average PCW benchmark speed of 1.8 seconds, this is the fastest BASIC available (faster than any other PCW have tested) and compares with 14 for a normal BBC. See table for other comparisons.

EDITOR
Full GEM based scrolling editor is included. Supports search and replace, cut, copy, paste and very fast scrolling speeds. Multiple programs may be held in memory at once, and each program can have its own editing window and associated icon.

PROGRAM SIZE
There is no limit to program size, other than available memory, and there is no speed degradation for running large programs as there is on many other interpreters. Strings may be up to 64K long, arrays may be over 64K.

ASSEMBLER
Similar in concept to BBC BASIC, this allows mixing of assembly language and BASIC together. The assembler can assemble at over 50,000 lines per minute making it one of the fastest available. Macro and conditional assembly facilities combined with one of the best editors around make this a superior alternative to many dedicated assemblers.



STRUCTURED
Fast BASIC supports REPEAT..UNTIL, WHILE.. WEND and multi line IF.. THEN..ELSE constructs. Also named procedures and functions and memory indirection ensure that FAST BASIC supports many of the best features of languages like PASCAL or C, but without the drawbacks.

GEM
Direct and full access is given to the ST graphics such as circle, arc, pie, area filling etc. In addition there are a range of keywords for controlling the menus, icons and windows. It is possible to write programs that present the user with a perfectly standard GEM type interface.

COMPARISONS

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IBM AT	6.8
IBM PC	16.8
BBC B	14.8
AMSTRAD	14.7
SINCLAIR QL	15.6
COMMODORE 128	40.1
SPECTRUM	54.8
FAST BASIC	**1.8**

Review

"...it positively flies."
"Students of structured programming will be well pleased.."
"Perhaps the most staggering advantage of Fast BASIC over the official lingo concerns using the various facilities offered by GEM."
"...it's a vast improvement on Atari BASIC."

Popular Computing Weekly

Review

"The Fast BASIC package provides a complete system for the home programmer; the language is beautifully structured."
"The cartridge spans the gap between high level and low level programming languages and combines some excellent high level structures...It seems to have the advantages of languages like C and Pascal, without the restrictions."
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ST User magazine

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ST games – the way ahead

By Andrew Bennett

WE tend to take the wealth of games software available on our STs for granted. However, it wasn't always like that. After all, computer software doesn't write itself.

The first games were written by professional programmers during their spare time, using the mainframe computers owned by the large corporations or universities where they worked.

They contained very few graphics, since most of the mainframes weren't connected to screens, their output going to teletype printers. Adventure games were prevalent, with the original Colossal Cave and Zork being written during the mid-seventies.

The first game with graphics – later to be called Space War – put the player in charge of a simple triangular ship which could be steered around the screen while shooting another ship piloted by a friend.

When Pong, or Ping as it was called in the UK, was introduced into pubs and clubs in the late seventies, the arcade game was born. This of course brought about the arcade craze and such games as Space Invaders. It was in this period that Atari introduced its home computer game which accepted cartridges.

Next came the Atari 400 and 800, 8 bit computers which brought about a vast influx of brightly coloured games. Although they would rather not admit it, Atari now has a new games winner on its hands in the shape of the ST series. With its minimum 512k of memory and high resolution colour graphics, the ST represents the best yet in affordable home game systems.

At present there are some 200 game titles for the ST. Some are simply ST versions of ones which have appeared on older 8 bit machines. Most have been transferred to the ST "as is", not having been upgraded to take account of the ST's extra memory or better graphics capabilities.

Other games for the ST have been converted from the mono Apple Macintosh. In general these games have taken account of the ST's extra power and memory but have failed to use its colour capabilities.

Just a few games have used the ST's capabilites to greater effect. Three outstanding ones are The Pawn, Psion Chess and the newest release, Starglider.

The Pawn, from Rainbird, was one of the first games to be released for the ST. It uses both the ST's colour and memory capabilities to achieve an adventure which has given Infocom a run for its money.

Psion Chess was specially written for 68000-based computers such as the ST. Written by a professional chess machine programmer it represents the best attempt yet at a perfect chess program. You'll find a full review on Page 5.

Also reviewed in this issue is Rainbird's Starglider. Under development for over a year, programmer Jeremy San tweaked every line of machine code to get maximum speed.

So much for the present. What will the future bring in the games field? If you had asked that question of Atari 400 owners in 1981, would they have foreseen such famous names as Preppie, Mercenary or Flight Simulator II? I think not. Yet the games titles of 1981 were at the forefront of game design.

Impossible as it is to predict future developments we can get a fair indication of the direction that ST games will take by looking at its capabilities and how they might be exploited by dedicated games programmers in the future.

Some of the features that will be used in the games of the future already exist. Starglider's 18 second burst of digitised music is an indication of how special hardware will be used to produce effects that can then be heard or viewed on a normal ST.

Psion Chess represents how the ST's speed and large amount of memory will be used to produce more intelligent games because they draw upon more and more information before making decisions.

Adventure game writers will also use this to their advantage. Future games will appear more realistic with better graphics, more detailed locations and highly intelligent characters.

It will be possible to meet real characters

→

Mercenary from Novagen

rather than just hacking them to death. You will be able to make real friends or enemies of these characters who will be far more "three dimensional" than today's hobbits and robots.

Adventure games will also be much faster than in the past. The ST's large amount of memory means that its games no longer have to pause while more data is brought in from disc.

Infocom's offerings have been updated to be almost completely memory resident and the increase in speed is noticeable to everyone who played their games on 8 bit machines.

2D display from Psion Chess

Arcade games will also be much closer to their coin operated counterparts. For example Electronic Arts are about to release a version of Marble Madness for the ST, almost indistinguishable from the arcade original.

This is possible because the ST's 320 by 200 16 colour graphics mode matches many of today's arcade machines. Although the resolution is similar to that of many 8 bit machines, the older machines must half their horizontal resolution in order to display more than two colours.

With the system employed on the ST, each one of the 64,000 dots on the screen can be any of the 16 colours available, these 16 colours being in turn chosen from the ST's pallette of 512 colours.

And of course the ST's blitter chip, discussed in detail in last month's *Atari ST User*, will make graphics operations much faster than ever before, giving smoother graphic displays.

Overall though, the ST games player today can no more tell what is coming than could his 8 bit counterpart five years ago. We can only sit back, mouse in hand, and wait to see what appears on our monitors – certain that it will be at the forefront of games creation. ■

HOME VIEW

HOMEVIEW

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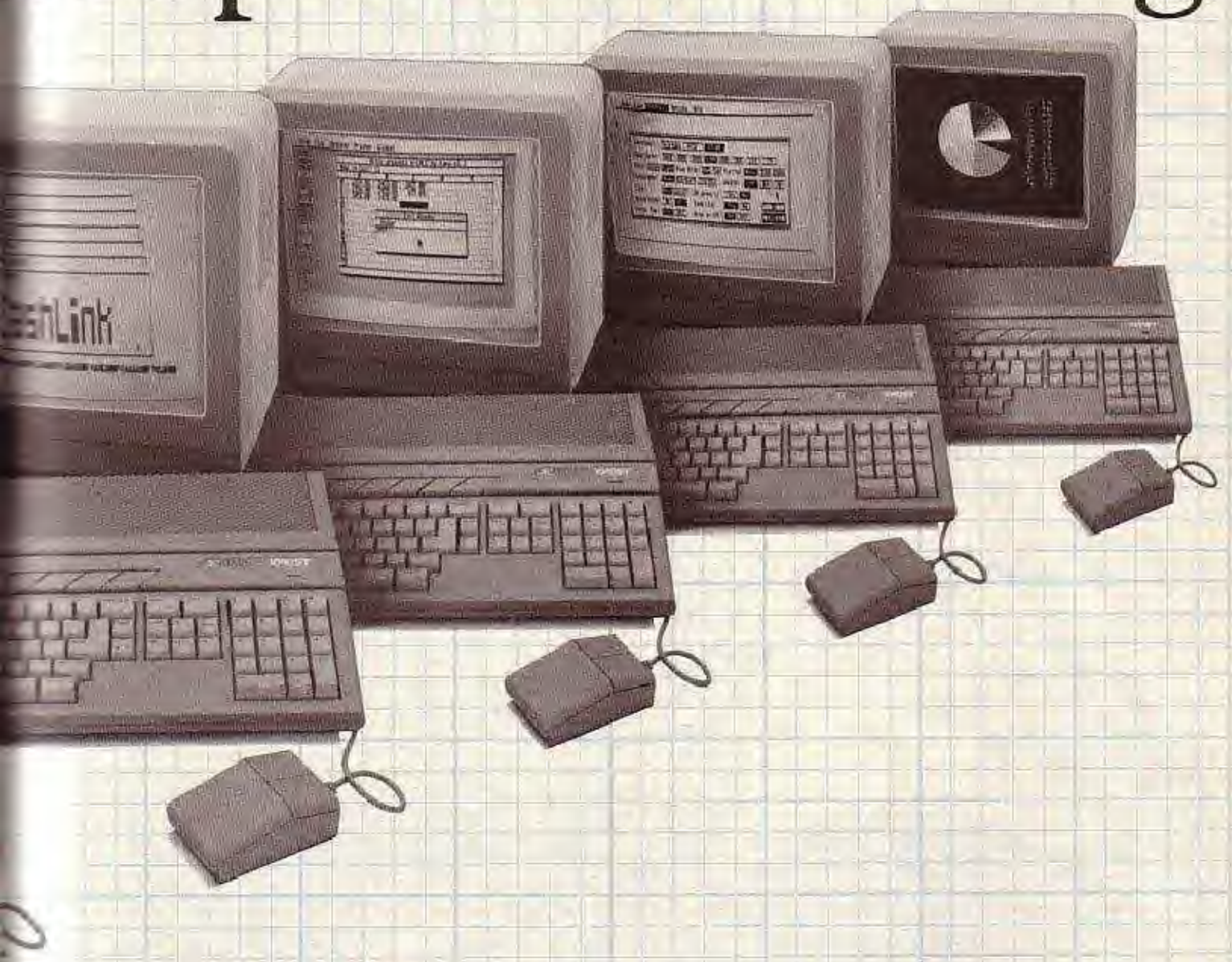
)STF lacks software, s to prove him wrong.



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ONE of the most annoying features of the ST is the fact that each of the three graphics modes is stored in memory in a completely different format. This means that pictures created in one mode can't be used in another. Here are two short Basic programs that will convert a low or medium resolution colour picture into a form that can be displayed on a black and white monitor.

Program I converts the colour picture into a quarter size black and white screen. You can use it to try out various settings before you process the picture through the longer, slower Program II which also allows you to set different shades for each colour used.

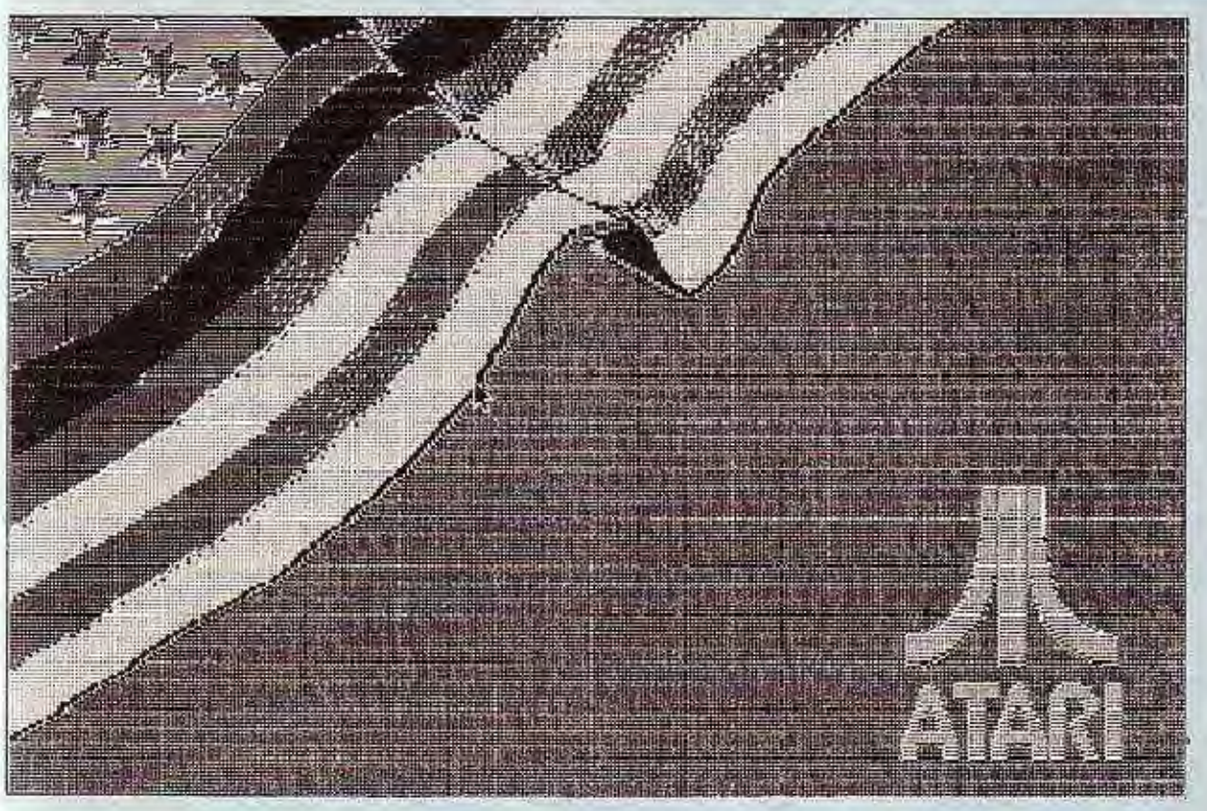
Type in both programs and save them to disc. When you run Program I you will be asked for five pieces of information:

- The picture's name on disc
- The load offset – the number of bytes at the start of the file before the actual picture data starts. For Neochrome files this number is 128 and for Degas files it is 34
- The number of planes – two for medium mode picture, four for low resolution
- The start column – the column where the conversion will begin
- Reverse or normal

A quarter screen picture will quickly be produced which will allow you to experiment with the various settings before moving on to Program II.

After you have the various settings as you want them, run Program II. It has one extra prompt – Shading – which allows you to set the type of shading pattern that you require for each colour. Enter four numbers in the range 0 to 5 separated by commas. Some experimentation will be required for the best results.

When the conversion is finished, you can type R to load another picture or any other key to save the picture to disc. It will be saved with the extender .MON. ■



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Program I

```
10   DEF SEG=0:DEFSNG A-b
20   address =&H78000:zer%=0
30   openw 2:clearw 2
40   begins
50   INPUT "Picture name :";name$
60   INPUT "Load Offset :";offset
70   while planes <1 or planes >4:input "Colour planes :";planes :wend
80   input "Start column (0 to 3)  :";s%:s%=s%*2
90   input "Negative (Y/N) :";n$ :if n$="Y" then neg%=65535 else neg%=0
100  BLOAD name$,address-offset
110  p1%=800/planes :p2%=2*planes :p3%=40*planes :f%=400/p2%
120  FOR y%=zer% TO p1% :count%=zer% :rem ** row count
130  FOR x%=s% TO f% STEP p2%      :rem ** column count
140  aword=PEEK(address+y%*p3%+x%) :if neg%<>0 then aword=neg%-aword
150  rem ** get every 2nd or 4th word (according to mode)
160  POKE address+ly%*80)+count%,aword :count%=count%+2
170  NEXT
180  NEXT
190  sound 1,8,12,4,25 :if inp(2)=ASC("R") then begin else storepic
200  storepic:
210  MID$(name$,LEN(name$)-2,3)=".mon"
220  BSAVE name$,&H78000,32000
230  end
```

Program II

```
1 def seg=0 :def#ng w :defint p :on error goto 999 :address!=&h78000
2 option base 0 :dim table!(39),power!(16) :zer%=0 :maxint!=65536
3 def fns(x%)=sgn(x%)-abs(sgn(x%)) :for x%=0 to 16 :read power!(x%) :next
4 openw 2:s%ilw 2 :clearw 2 :closew 1 :closew 0
5 begins
6 INPUT "PICTURE NAME :";name$
7 INPUT "Load Offset :";offset :bload name$,address!-offset
8 input "Shading :";p1,p2,p3,p4 :n1=fns(p1) :n2=fns(p2) :n3=fns(p3) :n4=fns(p4)
9 p1=2*(abs(p1)-1) :p2=2*(abs(p2)-1) :p3=2*(abs(p3)-1) :p4=2*(abs(p4)-1)
10 BLOAD name$,address!-offset:poke systab+24,1    :rem *** turn GEM off
11 for y%=zer% to 31840 step 160                   :rem *** row counter
12 mono!=address!+y%
13 for x%=zer% to 152 step 8                       :rem *** column counter
14 rem *** get word from each colour plane
15 where!=address!+x%+y% :word1=peek(where!+p1)
16 word2=peek(where!+p2) :word3=peek(where!+p3) :word4=peek(where!+p4)
17 new1!=0 :new2!=0 :new3!=0 :new4!=0
18 rem ***  check if negative plane
19 if n1 then word1=-(word1+1)
20 if n2 then word2=-(word2+1)
21 if n3 then word3=-(word3+1)
22 if n4 then word4=-(word4+1)
23 rem *** convert from two's complement to straight binary
24 if word1<0 then word1=maxint!+word1
25 if word2<0 then word2=maxint!+word2
26 if word3<0 then word3=maxint!+word3
27 if word4<0 then word4=maxint!+word4
28 rem *** arrange words in pattern 0102030b1b2...
29 power%=0  :twopow!=65536
30 while  word1 >256 or word2 >256 or word3 >256 or word4 >256
31 power%=power%-1 :twopow!=twopow!/2
32 bit1=int(word1/twopow!) :bit2=int(word2/twopow!) :word1=word1-bit1*twopow!
33 bit3=int(word3/twopow!) :bit4=int(word4/twopow!) :word2=word2-bit2*twopow!
34 word3=word3-bit3*twopow! :word4=word4-bit4*twopow!
35 new1!=new1! + bit1*power!(power%+power%+1) + bit2*power!(power%+power%)
36 new3!=new3! + bit3*power!(power%+power%+1) + bit4*power!(power%+power%)
37 wend
38 twopow!=256 :power%=8
39 while word1 + word2 + word3 + word4 > 0
40 power%=power%-1 :twopow!=twopow!/2
41 bit1=int(word1/twopow!) :bit2=int(word2/twopow!) :word1=word1 mod twopow!
42 bit3=int(word3/twopow!) :bit4=int(word4/twopow!) :word2=word2 mod twopow!
43 word3=word3 mod twopow! :word4=word4 mod twopow!
44 new2!=new2!+ bit1*power!(power%+power%+1) + bit2*power!(power%+power%)
45 new4!=new4! + bit3*power!(power%+power%+1) + bit4*power!(power%+power%)
46 wend
50 poke mono!,new1! :poke mono!+2,new2! :mono!=mono!+4
51 table!(x%/4)=new3! :table!(x%/4+1)=new4!      :rem *** store next row
52 next
53 rem *** at end of row ,read & poke next row from vector 'table!'
54 pono!=address!+y%+80 :for z%=0 to 7A step 4 :poke mono!+z%,table!(z%/2)
55 poke mono!+z%+2,table!(z%/2+1) :next
56 next
57 poke systab+24,0                                 :rem ** restart GEM
58 sound 1,8,12,4,25 :if inp(2)=asc("R") then begin  else storepic
59 storepic:
60 mid$(name$,len(name$)-2,3)="mon"
61 bsave name$,&H78000,32000
62 end
63 rem *** powers of 2
64 data 1,2,4,8,16,32,64,128,256,512,1024,2048,4096,8192,16384,32768,65536
999 poke systab+24,0 :?"Error ";err,"At line ";erl :end
```

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SanTa's tips for Christmas

AS a special Christmas present to all of you who are new to the ST or *Atari ST User*, we include here a selection of hints and tips which will let you use your ST more productively – and hopefully more enjoyably.

★★★

IF you find that memory is running short you can save a few k by erasing some accessories from your boot-up disc. The accessories are held in various files that end in the extender .ACC. You can save the memory these would normally use by renaming the ones you don't use very often.

To rename an accessory, click once on the file and then select Show Info from the File menu. Now press backspace three times and type in a new extender name for the file. To remind yourself that these files are in fact accessories you should rename them to something like .AC1. If you ever wish to use them as accessories again, simply change the extender back to .ACC.

★★★

IF you have a program that you always use when you turn on your ST, you can make it auto run by creating a folder called AUTO by using the New Folder option from the File menu. Programs that you place in this folder will automatically be run when you use that disc as the boot disc.

Unfortunately only simple text programs which have little or no graphics can be auto run in this way, because the ST runs the contents of its AUTO folder before it has completely initialised itself. You must experiment to see which of your programs will work.

★★★

TAKE very good care of your ST mouse. If you should lose it or if it needs repairing outside its twelve months' guarantee, a replacement from Atari will cost you a staggering £52!

★★★

POSSIBLY some of you are still using version 1.01 of 1st Word. If so, you should take or send your 1st Word disc back to where you bought your ST and have it upgraded to version 1.06. This will fix some of the annoying bugs found in earlier versions. Make sure that you don't have any documents on the disc, because they'll be erased.

★★★

YOU might have noticed the Save Desktop option on the Option menu. This lets you save your preferred desktop configuration. Set the desktop up with whichever disc windows you wish to open and place them where you want them to be. Now select Save Desktop and a file called DESKTOP.INF will be saved on to the disc in drive A. Now whenever you boot with that disc in drive A the desktop will be restored exactly as you like it.

★★★

IT IS possible to change the name which appears under the disc icons on the desktop, for example to MYDISC. The method is fairly simple. First select disc A by clicking on it once, then select Install Disc Drive from the Option menu. You will be presented with the name and letter of the drive.

Move the mouse pointer to the name line and click once. You can now backspace over the name and type in your replacement. Certain characters, such as space, cannot be used but a little experimentation will show the acceptable characters. When you have finished entering the name, don't press Return, but click on the Install box and your name will now appear under the icon and will be saved if you save the desktop.

★★★

ALWAYS set the clock using the control panel at the start of a session. Since the time is saved along with the file it will help you to differentiate between different versions of the same file.

★★★

IF you have been opening and closing directories to find a particular file or program, you may like to know that you don't have to close the directory window every time you change discs. First open a directory window as normal. Next change the disc in the drive and press Escape once. The new directory will be read in and will replace the old one on the screen.

★★★

THE file selection section of most ST programs is easy to use – simply point at the file that you want and click on OK. The only problem arises when your file is on a different disc from your program. You have to read in the directory of the new disc. This is quite easy. After the file selection box comes up on the screen change the disc in the drive, then click once on the top of the small window which contains the file listing. The new disc's directory will now be read in.

You must always use this method when changing discs as doing it without rereading the directory might lead to your discs becoming corrupted and unusable. ■

By Andrew Bennett

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EDWARD SHARK reports

HOT news this month has to be the developments with the Magic Sac cartridge which, at a shade under 150 dollars "makes your ST think like a Mac".

Yes, that's right – an Apple Macintosh. You believe it? I didn't until I read all the press releases from Dave Small, proprietor of Data Pacific, a Denver Colorado firm which seems to be cocking a snook at Apple's Mac copyright.

In case you missed last month's news pages when *Atari User* outlined the Magic Sac, the unit plugs into the ST's rom cartridge slot. When you add the twin Mac rom set – not supplied with the unit – it allows you to load and run genuine Macintosh software.

The roms will set you back around $15 (ten pounds in Britain) – if you can persuade your Apple dealer to sell them to you. That shouldn't pose too much of a problem in the UK though, as I hear that Robtek (more of which later) has more than 10,000 rom sets "just in case".

In the US, two versions of the Magic Sac are available at the time of

writing. Magic Sac 1 sells for $129, while Magic Sac Plus is $149.

Magic Sac 1 consists of a cartridge, an ST disc with transfer and other software, a Macintosh disc with a transfer program and a manual.

Magic Sac Plus is the more expensive product. It includes an onboard clock calendar with battery back-up to keep time. The clock may be used, or paged in, from either ST Tos or the Macintosh operating system.

Both systems include a transfer cable to port data across from the Mac to the ST. You plug in the cartridge and rom set and boot the disc up. The cartridge contains around 64k of code which, coupled with the 33k disc based program, gives you a Mac environment to work in.

The ST's disc format is thus remapped into a ten sector format with 400k storage capacity (as opposed to the nine sectors with 360k normally available on the ST). This psuedo-Mac format is, I am reliably informed, similar to the Macintosh's, except for the variable speed rate.

A problem with the Magic Sac is that while the Mac has two serial ports the ST has just one. Thus under the Magic Sac's program environment the modem is assigned to the ST's serial port. Printing is handled via the parallel port – not standard I know, but it works.

Dave Small designed the Magic Sac and unveiled it in late '85 at the West Coast Computer Faire. In a conference held on-line in the Compuserve Atari SIG (Special Interest Group) he said that the parallel function was there to support Epson and similar parallel printers that most ST owners had already. Quite rightly Dave's argument was that there is no point in forcing ST owners to invest in serial interfaces for their printers.

During the conference Starglider author Jeremy San raised the interesting question as to whether it would be possible for him to develop a Mac version of Starglider on his ST. Dave Small replied that since Starglider manipulated the ST's screen memory directly, and the Mac has a limited cpu running at 5.9Mhz, Starglider will run, though at a much slower rate. The fact that the ST's screen is 80 bytes wide, compared with 64 bytes on the Mac may also cause problems, although Dave is working on this.

Dave also made the valid point that Apple may be adopting a tolerant attitude towards the Magic Sac since, if Apple did quash Data Pacific, it would be foregoing a whole new generation of Mac enthusiasts.

The Mac has always been a second runner in the American PC stakes. In allowing the ST to run to the Mac standard, Apple is insuring against the possibility that there aren't enough Macs in circulation to maintain an effective user base.

Magic Sac suffers from one great disadvantage compared with owning the real thing – Macintosh discs run at variable speeds, with data being written proportionally to the disc over all its surface. As every ST owner will know, the ST writes its data at the same speed over the whole of the disc surface.

So even though Dave Small's software remaps the disc format, in its present configuration the Magic Sac will not run protected Macintosh software. Sadly, this rules out wonderful packages such as Jazz, Excel and Pagemaker running on the Magic Sac alone.

All is not lost, however, as Dave Small committed himself to bringing

out a plug-in and go Macintosh disc drive for the ST by the new year. Once this beast becomes available at Dave's projected price of "around the $200 mark", then the ST will really fly.

In fact, once Data Pacific starts marketing its ST/Mac conversion kits for $350 (drive and Magic Sac included), we'll see 512k ST/Mac combinations becoming available for around the $900/£600 mark - an interesting situation when one thinks that a 512k Macintosh itself will set you back the better part of £2,000.

As I've said, Magic Sac is produced by Dave's Denver-based company, Data Pacific, for North American consumption. At the time of writing I hear that Robtek, a London-based firm, is planning to manufacture the units under licence. But because of the licencing costs and such, I gather that the cost will be around the £150/200 mark. Still, even at that price, it makes a 2Mb Mac/ST combination available for the same price as a 512k Macintosh. ■

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THE Nexus development system allows you to develop software which can later be placed on to rom or eprom to make an ST cartridge. The system consists of an uncased printed circuit board which plugs into the cartridge slot at the side of the ST.

It contains two Zero Insertion Force (ZIF) sockets to hold roms while programming, 64k of static CMOS ram to emulate roms during development, and two header sockets which can connect the board into the cartridge address space of another ST.

The printed circuit board is quite robust and I have had no problems with it. The disc-based driving software uses Gem to present a very friendly user interface. The documentation – supplied on disc – is of a high standard.

The development system is very easy to use – Nexus has gone to a lot of trouble here to make you feel at ease. Having started up the driving program and selected one of the 12 rom types a desktop is displayed with five icons down the left hand side and a dump of the static ram in a window.

You can carry out various tasks such as searching for values in a specifed range, filling or clearing the static ram and verifying the eproms against the contents of the static ram. Sub-options include the facility to edit the static ram, as well as letting you choose how it is to be displayed in the dump window – in byte, word or long word form.

From this point programming the eproms becomes quite simple. First a binary image of the eproms must be loaded into the static ram. Then the ram icon, which looks like a male sheep, is dragged to the eprom icon. The Ext. Simulate option allows you to run the eproms on the SIM sockets on the printed circuit board or a program in static ram. You can also choose whether to leave the eproms/static ram enabled when you quit the program.

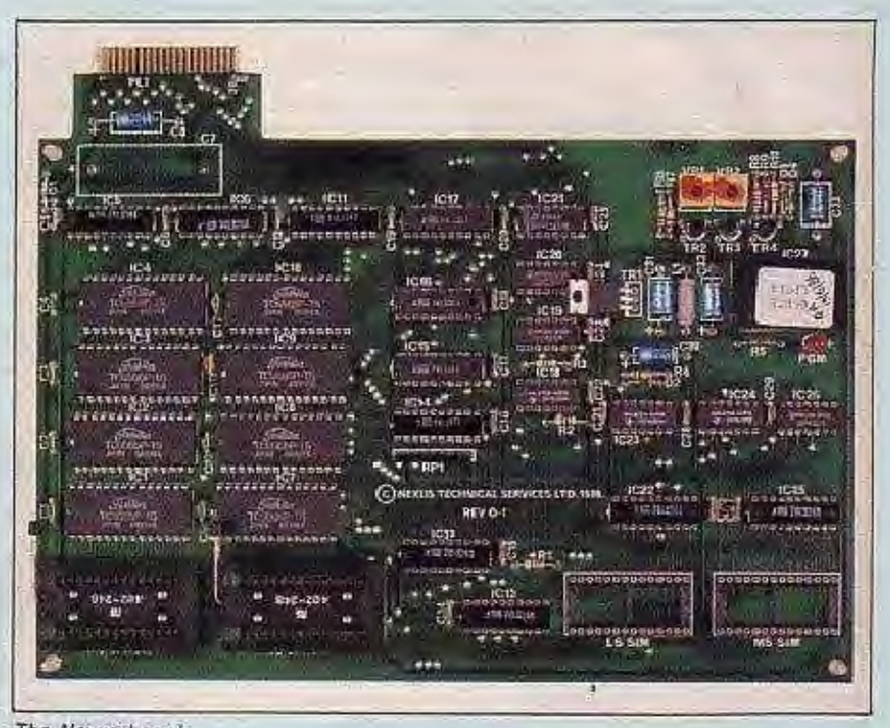
The system has its teething troubles. The software version I was supplied with (1.02) overwrites the last byte of a 64k object file with a $FF byte. This problem can be overcome, but it is annoying and time-consuming, as is blowing a pair of 32k eproms using the so-called "fast" algorithm. This takes about 20 minutes.

Also the development system works best with Intel's eproms. Trying to program units from other manufacturers can prove unreliable.

It would be nice if Nexus had allowed the board to take 64k eproms instead of restricting them to the smaller 32k 27256 chips. This means that it takes four eproms to blow a master copy of 128k cartridges such as Fast Basic instead of the two used in the production versions.

Having said this, the system is constantly being updated and Nexus gives a very good technical backup for any problems the user may come up against. If you are interested in producing cartridge-based software for your ST, this is the product for you. ■

By Clive Haynes



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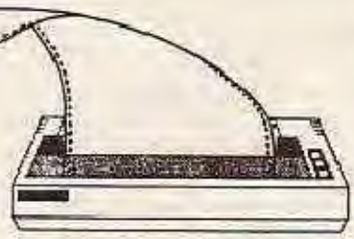

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Dealer Enquiries Welcome